

HOW HRP RESEARCH RESULTS CONTRIBUTE TO HUMAN SPACE EXPLORATION RISK MITIGATION

S. B. Lumpkins¹, J. A. Mindock²

¹MEI Technologies, 18050 Saturn Lane, Suite 300, Houston, TX 77058 (sarah.b.lumpkins@nasa.gov)

²Wyle Science, Technology and Engineering, 1290 Hercules Blvd, Houston, TX 77058
(jennifer.a.mindock@nasa.gov)

In addition to the scientific value of publications derived from research, results from Human Research Program (HRP) research also support HRP's goals of mitigating crew health and performance risks in space flight. Research results are used to build the evidence base characterizing crew health and performance risks, to support risk research plan development, to inform crew health and performance standards, and to provide technologies to programs for meeting those standards and optimizing crew health and performance in space. This talk will describe examples of how research results support these efforts.

For example, HRP research results are used to revise or even create new standards for human space flight, which have been established to protect crew health and performance during flight, and prevent negative long-term health consequences due to space flight. These standards are based on the best available clinical and scientific evidence, as well as operational experience from previous space flight missions, and are reviewed as new evidence emerges. Research results are also used to update the HRP evidence base, which is comprised of a set of reports that provide a current record of the state of knowledge from research and operations for each of the defined human health and performance risks for future NASA exploration missions. A discussion of the role of evidence within the HRP architecture will also be presented.

The scope of HRP research results extends well beyond publications, as they are used in several capacities to support HRP deliverables and, ultimately, the advancement of human space exploration beyond low-Earth orbit.